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Economic and Fiscal Impacts of New House Bill 2313 Transportation Funding for Virginia Department of Transportation for FY 2014-FY 2019

Prepared for Office of the Secretary of Transportation
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1. Executive Summary

As a result of the 2013 legislative session, the Commonwealth of Virginia will have approximately $6.5 billion in additional transportation revenues over the next six years. Of this amount, $2.7 billion is for VDOT, $0.7 billion for DRPT, and $3.1 billion for the Hampton Roads and Northern Virginia regions.[1] This report focuses on the highway funding for VDOT and the regions, but does not include DRPT's new transit and rail funding.

Of the $2.7 billion for VDOT, $120 million is for debt service and the majority of $313.7 million is for distribution to localities across the state.[2] The net of $2.3 billion combined with the $3.1 billion from the Hampton Roads and Northern Virginia regions is the total highway construction investment in Virginia from Fiscal Year (FY) 2014 through FY 2019.[3] This report analyzes the economic and fiscal impact of construction spending activities of this highway transportation investment in the Commonwealth of Virginia and its nine transportation districts.[4]

The proposed transportation investment covers a variety of projects across the Commonwealth of Virginia.

The total $5.4 billion investment will be spent on a variety of projects, such as pavement and bridge reconstruction and rehabilitation projects. The transportation plan covers projects from FY 2014 through FY 2019. Those projects are in different stages of development, such as: preliminary engineering, right-of-way acquisitions, and construction.

The six-year cumulative economic impact during the construction phase of Virginia's transportation investment can reach $8.1 billion that annually supports 10,133 jobs in the state from FY 2014 through FY 2019.

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[1] At the time of the publication of this report, due to not having a specific project plan for the new House Bill (HB) 2313 funding for Northern Virginia, all new HB2313 funding for Northern Virginia was included in the economic impact study of the VDOT highway projects, even though some of the funding can be used for public transit projects in Northern Virginia. The IMPLAN model used for this analysis does not distinguish between highway construction and rail/transit construction. Therefore, the estimated total economic impact of all highway and public transit funding in Virginia is the same regardless of the fact that the regional funding for Northern Virginia is captured in the VDOT economic impact until the actual projects are selected by the region.

[2] This funding is being processed through the State Construction Formula, the majority of which is distributed to counties and cities across the state and these localities will be selecting projects on which to allocate these funds. That project selection process has not been completed as of the publication of this report.

[3] This number does not include new funding for Virginia Department of Rail and Public Transportation (DRPT). For an economic impact of DRPT funding, please see Economic and Fiscal Impacts of New House Bill 2313 Transportation Funding for the Department of Rail and Transportation for FY 2014-FY 2018, Prepared by Chmura Economics & Analytics, May 13, 2013.

[4] Please see Appendix 1 for the definition of the Virginia Department of Transportation (VDOT) districts. The economic impacts for Hampton Roads and Northern Virginia Districts include funding through VDOT and regional planning district commissions.

Of the $8.1 billion in total impact, $4.4 billion is the estimated direct construction and engineering spending while $3.7 billion represents the ripple effects. On an annual average basis, the economic impact is $1.3 billion that can support 10,133 jobs per year in Virginia from FY 2014 through FY 2019.

Construction spending from this transportation investment can bring Virginia's state government a six-year total of $75.7 million in tax revenue while fiscal benefits for local governments can total $5.2 million from FY 2014 through FY 2019.

Local government revenue from the transportation investment is due to business, professional, and occupational license (BPOL) taxes. State government revenue is due to individual and corporate income taxes.

2. Background

In the next six years, from FY 2014 through FY 2019, VDOT and the regions of Hampton Roads and Northern Virginia plan to invest $5.4 billion in construction projects on its transportation infrastructure.[5] This transportation plan covers a variety of projects across the Commonwealth of Virginia. The projects include interstate reconstructive paving, replacement of deficient bridges, paving of unpaved secondary roads, and significant road improvement projects.

To quantify the economic impact of construction spending from this investment on the Commonwealth and its nine transportation districts, Chmura Economics & Analytics (Chmura) was retained to conduct an economic and fiscal impact study.[6] This study only quantifies the economic impact of construction spending of the transportation investment, as project-level data on the ongoing benefits of the developments are not available.[7]

The economic impact of construction spending from the transportation investment is analyzed in the following three categories: direct, indirect, and induced.[8] Direct impact measures the actual dollar amount spent on preliminary engineering and construction.[9] Indirect and induced impacts measure the secondary benefits of transportation spending for regional businesses. For example, indirect effects are attributed to state and regional industries supporting construction activities, such as site development and truck transportation. Induced effects occur when individuals hired by the construction firms spend their income at regional businesses (such as retail or doctor's offices), thus injecting more money into the regional economy.

The indirect and induced effects are estimated with IMPLAN Pro[10] software after the direct impact is estimated. IMPLAN Pro is an economic impact assessment modeling system that allows the user to build economic models to estimate the impact of economic changes in states, counties, and communities. It is one of the most widely-used software packages, is updated annually, and is customized by individual localities—thus providing a realistic picture of local economies.

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[5] This amount does not include investment funding for the Department of Rail and Public Transportation (DRPT).
[6] The economic impacts for Hampton Roads and Northern Virginia Districts include funding through VDOT and regional taxes from House Bill 2313.
[7] For a general discussion on the ongoing benefits of transportation projects, please see: Economic and Fiscal Impacts of the Construction Phase of Transportation Funding in Virginia and its Regions. Prepared for VDOT, by Chmura Economics & Analytics, February 2011.
[8] Appendix 2 of this study provides a glossary including these terms.
[9] The money spent on right-of-way acquisitions represents a transfer of property which will not generate additional economic impact on the study region.
[10] IMPLAN Pro is one of two major software packages used by economists to evaluate the economic effects of an economic event.

3. Economic Impact of Transportation Investment

3.1. Economic Impact in Virginia

In the next six years, VDOT and the regions of Hampton Roads and Northern Virginia intend to invest $5.4 billion on its transportation infrastructure. This transportation plan covers a variety of projects across the Commonwealth of Virginia. The Northern Virginia region is scheduled to receive the largest amount of investment at $2.3 billion, followed by the Hampton Roads region ($1.8 billion) due to the new state regional taxes provided by House Bill 2313. In terms of the timing of those projects, the transportation plan covers the period from FY 2014 through FY 2019. Those projects are in different phases of the project cycles— preliminary engineering, right-of-way acquisitions, and construction.

Table 1 presents the estimated economic impact of construction spending related to the transportation investment. When the estimated right-of-way costs are excluded from the $5.4 billion of total funding, the direct spending is estimated to be $4.4 billion.[11] From FY 2014 through FY 2019, it is estimated that construction spending from the transportation investment will generate a total economic impact (including direct, indirect, and induced impacts) of $8.1 billion in Virginia, supporting a total of 60,799 cumulative jobs. Among the economic impact, $4.4 billion is estimated direct spending within Virginia, with direct jobs amounting to 32,794 from FY 2014 through FY 2019 (or 5,466 per year). The indirect impact in Virginia will total $1.6 billion and support 11,119 cumulative jobs (or 1,853 per year) in industries catering to construction, such as site preparation and truck transportation. The induced impact is expected to total $2.1 billion with 16,886 cumulative jobs (or 2,814 per year) in the state during the construction period—jobs concentrated in consumer service-related industries such as restaurants, hospitals, and retail stores. From FY 2014 through FY 2019, the annual average economic impact of construction spending from transportation investment is $1.3 billion that can support 10,133 jobs in Virginia.

Table 1: Economic Impact of Transportation Investment in Virginia during Construction Phase

		Direct	Indirect	Induced	Total
Six-Year Total (FY 2014-FY 2019)	Spending ($Million)	$4,430.3	$1,591.2	$2,073.0	$8,094.5
	Employment	32,794	11,119	16,886	60,799
Annual Average (FY 2014-FY 2019)	Spending ($Million)	$738.4	$265.2	$345.5	$1,349.1
	Employment	5,466	1,853	2,814	10,133

Note: Numbers may not sum due to rounding

Source: Chmura Economics & Analytics and IMPLAN 2010

[11] For project costs that include right-of-way (ROW) acquisitions, where no specific ROW amount was given, Chmura used data from prior studies to allocate a percentage of that investment to ROW costs. Please see: Economic and Fiscal Impacts of the Construction Phase of Transportation Funding in Virginia and its Regions. Prepared for VDOT, by Chmura Economics & Analytics, February 2011. Chmura excludes ROW in economic impact estimation.

3.2. Economic Impact in VDOT Districts

Table 2 provides the total economic impact of transportation spending in each of the nine VDOT districts.[12] Among all nine districts, the Northern Virginia district is scheduled to receive the largest amount of transportation funding due to the new state regional taxes. Consequently, the economic impact is the largest in this district. For example, in the Northern Virginia district, $1.7 billion of direct transportation funding (excluding right of way) can generate $2.8 billion in total economic impact from FY 2014 through FY 2019. These spending activities can support 18,836 cumulative jobs (3,139 jobs per year) in the Northern Virginia district from FY 2014 through FY 2019. Hampton Roads will also benefit from sizable economic impacts as a result of the transportation investment.

Table 2: Economic Impact of Transportation Investment in Districts during Construction Phase
Cumulative Impact (FY 2014-FY 2019)

		Direct	Indirect	Induced	Total	Annual Average Total Impact (FY 2014-FY 2019)
Bristol	Spending ($Million)	$149.3	$34.4	$34.0	$217.7	$36.3
	Employment	1,231	315	325	1,871	312
Salem	Spending ($Million)	$117.2	$34.3	$32.5	$184.0	$30.7
	Employment	987	314	307	1,608	268
Lynchburg	Spending ($Million)	$67.3	$17.2	$15.2	$99.8	$16.6
	Employment	585	146	144	875	146
Richmond	Spending ($Million)	$361.2	$126.7	$172.7	$660.5	$110.1
	Employment	2,700	946	1,442	5,088	848
Hampton Roads	Spending ($Million)	$1,320.5	$368.5	$490.0	$2,179.1	$363.2
	Employment	9,882	2,854	4,268	17,004	2,834
Fredericksburg	Spending ($Million)	$167.2	$48.5	$43.3	$259.0	$43.2
	Employment	1,361	392	391	2,144	357
Culpeper	Spending ($Million)	$83.4	$21.6	$24.1	$129.0	$21.5
	Employment	670	197	213	1,080	180
Staunton	Spending ($Million)	$173.1	$37.8	$39.9	$250.7	$41.8
	Employment	1,451	336	361	2,147	358
Northern Virginia	Spending ($Million)	$1,703.4	$450.9	$666.8	$2,821.1	$470.2
	Employment	11,165	2,863	4,808	18,836	3,139
Virginia	Spending ($Million)	$4,430.3	$1,591.2	$2,073.0	$8,094.5	$1,349.1
	Employment	32,794	11,119	16,886	60,799	10,133

Note: Numbers may not sum due to rounding
The sum of the district impact is smaller than Virginia impact, as there is leakage from regional impact that is captured elsewhere in Virginia

Source: Chmura Economics & Analytics and IMPLAN 2010

[12] The economic impacts for Hampton Roads and Northern Virginia Districts include funding through VDOT and regional taxes from House Bill 2313.

4. Fiscal Impact

During the construction phase from FY 2014 through FY 2019, the business, professional, and occupational license (BPOL) taxes are collected for local governments, and individual and corporate income taxes are collected for the state government. Chmura uses the average BPOL tax rates of all local governments in a district for estimating BPOL tax revenue. The total BPOL tax revenue is estimated to be $5.2 million from FY 2014 through FY 2019—the sum of BPOL taxes in all local governments in Virginia.

Table 3: State and Local Fiscal Impact (Cumulative FY 2014-FY 2019, $Million)

	Local BPOL Tax	Individual Income Tax	Corporate Income Tax
Bristol	$0.0	$1.7	$0.7
Salem	$0.1	$1.2	$0.6
Lynchburg	$0.1	$0.7	$0.4
Richmond	$0.5	$5.0	$1.6
Hampton Roads	$2.3	$18.0	$5.8
Fredericksburg	$0.1	$2.0	$0.8
Culpeper	$0.1	$1.0	$0.4
Staunton	$0.2	$1.8	$0.9
Northern Virginia	$2.6	$28.4	$6.2
Virginia	**$5.2**	**$55.8**	**$19.8**

The sum of the district number is be smaller than the Virginia number, as there is leakage from regional impact that is captured elsewhere in Virginia

Source: Chmura Economics & Analytics

For the Virginia state government, revenue originates from individual and corporate income taxes as a result of new employment and profits from construction spending. The total individual income tax revenue is estimated to be $55.8 million from FY 2014 through FY 2019, while the corporate income tax revenue for this period is estimated to be $19.8 million.

Appendix 1: VDOT District Definitions

VDOT District Definitions

District		Localities				
1	Bristol	Bland	Buchanan	Dickenson	Grayson	Lee
		Russell	Scott	Smyth	Tazewell	Washington
		Bristol	Norton	Wise	Wythe	
2	Salem	Bedford Co.	Botetourt	Carroll	Craig	Floyd
		Franklin	Giles	Henry	Montgomery	Patrick
		Bedford City	Galax	Martinsville	Radford	Roanoke City
		Pulaski	Roanoke Co.	Salem		
3	Lynchburg	Amherst	Appomattox	Buckingham	Campbell	Charlotte
		Cumberland	Halifax	Nelson	Pittsylvania	Prince Edward
		Danville	Lynchburg			
4	Richmond	Amelia	Brunswick	Charles City	Chesterfield	Dinwiddie
		Goochland	Hanover	Henrico	Lunenburg	Mecklenburg
		New Kent	Nottoway	Powhatan	Prince George	Richmond City
		Colonial Heights	Hopewell	Petersburg		
5	Hampton	Accomack	James City	Northampton	Southampton	Surry
	Roads	Sussex	York	Greensville	Norfolk	Poquoson
		Chesapeake	Emporia	Franklin	Hampton	Newport News
		Portsmouth	Suffolk	VA Beach	Williamsburg	Isle of Wight
6	Fredericksburg	Caroline	Essex	Gloucester	King and Queen	King George
		King William	Lancaster	Mathews	Middlesex	Northumberland
		Fredericksburg	Richmond Co.	Spotsylvania	Stafford	Westmoreland
7	Culpeper	Albemarle	Culpeper	Fauquier	Fluvanna	Greene
		Louisa	Madison	Orange	Rappahannock	Charlottesville
8	Staunton	Alleghany	Augusta	Bath	Clarke	Frederick
		Highland	Page	Rockbridge	Rockingham	Shenandoah
		Buena Vista	Covington	Harrisonburg	Lexington	Staunton
		Warren	Waynesboro	Winchester		
9	Northern	Arlington	Fairfax Co.	Loudoun	Prince William	Manassas Park
	Virginia	Alexandria	Fairfax City	Falls Church	Manassas	

Source: Virginia Department of Transportation

Appendix 2: Impact Study Glossary

The following is a list of key terminologies frequently used in economic impact analyses.

Input-Out Analysis—an examination of business-business and business-consumer economic relationships capturing all monetary transactions in a given period, allowing one to calculate the effects of a change in an economic activity on the entire economy (impact analysis).

Direct Impact—economic activity generated by a project or operation. For construction, this represents activity of the contractor; for operations, this represents activity by tenants of the property.

Overhead—construction inputs not provided by the contractor.

Indirect Impact—secondary economic activity that is generated by a project or operation. An example might be a new office building generating demand for parking garages.

Induced (Household) Impact—economic activity generated by household income resulting from direct and indirect impacts.

Ripple Impact— the indirect and induced impacts combined are called ripple impact

Multiplier—the cumulative impacts of a unit change in economic activity on the entire economy.